Supplementary Information

Tree height and hydraulic traits shape growth responses across droughts in a temperate broadleaf forest

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Table S1: Species-specific bark thickness regression equations

Species	Equations	r.2
Carya cordiformis Carya glabra Carya ovalis Carya tomentosa Fagus grandifolia	ln[B]=-1.56+0.416*ln[DBH] ln[B]=-0.393+0.268*ln[DBH] ln[B]=-2.18+0.651*ln[DBH] ln[B]=-0.477+0.301*ln[DBH] ln[B]=1*ln[DBH]	0.226 0.040 0.389 0.297
Fraxinus americana Juglans nigra Liriodendron tulipifera Quercus alba Quercus prinus	ln[B]=0.418+0.268*ln[DBH] ln[B]=0.346+0.279*ln[DBH] ln[B]=-1.14+0.463*ln[DBH] ln[B]=-2.09+0.637*ln[DBH] ln[B]=-1.31+0.528*ln[DBH]	0.256 0.246 0.545 0.603 0.577
Quercus rubra	ln[B] = -0.593 + 0.292*ln[DBH]	0.087

Table S2: Species-specific height regression equations

Species	Equations	r.2
Carya cordiformis	ln[H] = 0.332 + 0.808*ln[DBH]	0.874
Carya glabra	ln[H] = 0.685 + 0.691*ln[DBH]	0.841
Carya ovalis	$\ln[H] = 0.533 + 0.741 \ln[DBH]$	0.924
Carya tomentosa	$\ln[H] = 0.726 + 0.713 \ln[DBH]$	0.897
Fagus grandifolia	$\ln[H] = 0.708 + 0.662 * \ln[DBH]$	0.857
Liriodendron tulipifera	ln[H] = 1.33 + 0.52*ln[DBH]	0.771
Quercus alba	ln[H] = 0.74 + 0.645*ln[DBH]	0.719
Quercus prinus	ln[H] = 0.41 + 0.757*ln[DBH]	0.886
Quercus rubra	$\ln[H] = 1.00 + 0.574 \ln[DBH]$	0.755
all	$\ln[H] = 0.839 + 0.642 * \ln[DBH]$	0.857

Table S3: Palmer drought severity index (PDSI) by month for focal droughts

year	month	PDSI	rank			
focal droughts						
1966	May	-2.98	2			
	June	-3.40	2			
	July	-4.08	2			
	August	-4.82	1			
1977	May	-2.96	3			
	June	-3.28	3			
	July	-3.61	3			
	August	-3.68	3			
1999	May	-3.63	1			
	June	-4.21	1			
	July	-4.53	1			
	August	-4.64	2			
other						
1991	May	-1.79	10			
	June	-2.10	10			
	July	-2.17	10			
	August	-3.06	4			

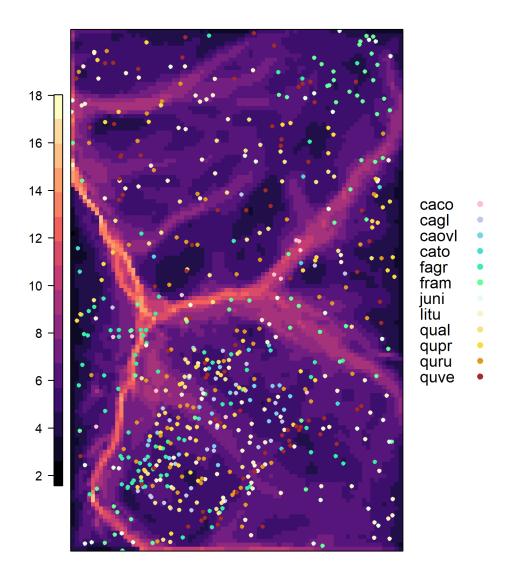


Figure S1: Map of ForestGEO plot showing TWI and location of cored trees

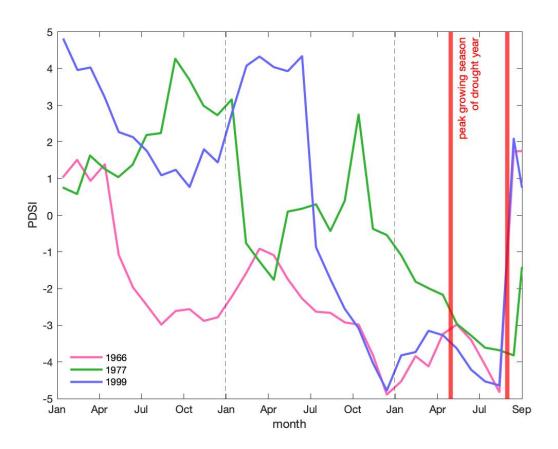


Figure S2: Time series of Palmer Drought Severity Index (PDSI) for the 2.5 years prior to each focal drought

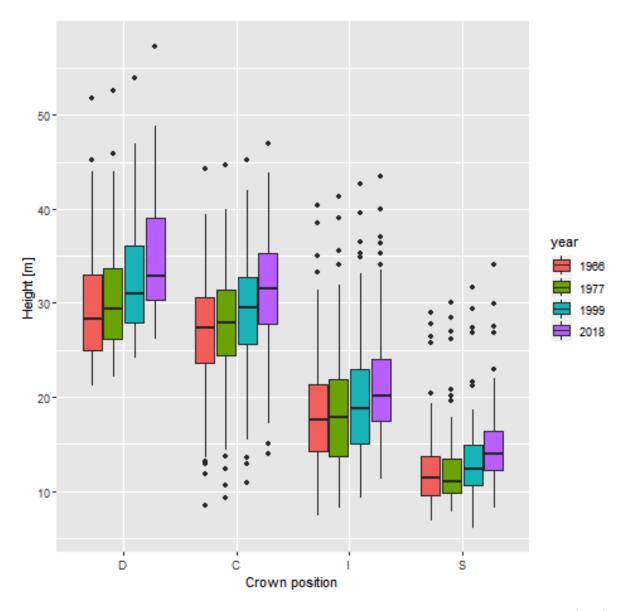


Figure S3: Height by canopy position across the three focal droughts and in the year of measurement (2018)